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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/694,855	10/24/2000	Robert M. Amici	00077	3438

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[REDACTED] EXAMINER

TRA, TUYEN Q

[REDACTED] ART UNIT [REDACTED] PAPER NUMBER

2873

DATE MAILED: 07/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/694,855	AMICI ET AL.
	Examiner Tuyen Q Tra	Art Unit 2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
 Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 17 April 2002.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-29 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-15, 18, 19, 22, 23, 26 and 27 is/are rejected.
 7) Claim(s) 16, 17, 20, 21, 24, 25, 28 and 29 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) The translation of the foreign language provisional application has been received.
 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6 .

4) Interview Summary (PTO-413) Paper No(s) _____ .
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____ .

DETAILED ACTION

1. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1-8, 10-12, 14, 15, 18, 19, 22, 23, 26 and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Jacobson et al.(U.S. Pat. 6,241,921 B1).

4. With respect to claims 1, 3, 14 and 15, Jacobson et al. discloses a twisting-cylinder display comprising of:
a) an arrangement of capsules, wherein each capsule comprises a bichromal ball having two hemispheres, wherein one of the hemispheres has at least a surface comprising a modified colored pigment having attached at least one organic group and the other hemisphere has at least a surface with a different color and different electrical properties, wherein each ball is enclosed within a shell wherein a liquid is present between the shell and ball so that the ball is free to rotate in response to an electrical field;

b) first and second electrodes wherein the arrangement is located between the electrodes and wherein at least one of the electrodes is substantially visually transparent; and

c) means for creating a potential difference between the two electrodes, wherein the potential difference causes the bichromal balls to rotate toward one of the electrodes (col. 2, lines 18-25, col. 3, lines 40-43, Fig. 1); wherein the organic group comprising at least one mixtures.

5. With respect to claims **2, 18 and 19**, Jacobson et al. discloses a twisting-cylinder display comprising of an arrangement of particles, wherein an optical response results from the rotation of the particles in a fluid, wherein a portion of the particles have attached at least one organic group having an ionic group, ionizable group, or both (col. 2, lines 18-25, col. 3, lines 40-43, Fig.1); wherein the organic group comprising at least one mixtures.

6. With respect to claim **4**, Jacobson et al. further discloses that the bichromal ball comprises a pigment in with at least one of the hemispheres comprising a surface containing the modified colored pigment (see Fig.1).

7. With respect to claim **5**, Jacobson et al. discloses a twisting-cylinder display comprising of a bichromal ball having two hemispheres, wherein one of the hemispheres has at least a surface comprising a modified colored pigment having attached at least one organic group and the other hemisphere has at least a surface with a different color and different electrical properties, wherein the ball is enclosed within a shell wherein a liquid is present between the shell and ball so that the ball is free to rotate (col. 2, lines 18-25, col. 3, lines 40-43, Fig.1).

8. With respect to claims **7, 8, 22 and 23**, Jacobson et al. discloses a twisting-cylinder display comprising of:

a) an arrangement of capsules, wherein each capsule comprises a bichromal ball having two segments, wherein one of the segments has at least a surface comprising a modified colored pigment having attached at least one organic group and the other segment has at least a surface

with a different color and different electrical properties, wherein each ball is enclosed within a shell wherein a liquid is present between the shell and ball so that the ball is free to rotate in response to an electrical field;

b) first and second electrodes (Fig. 1) wherein the arrangement is located between the electrodes and wherein at least one of the electrodes is substantially visually transparent; and
c) means for creating a potential difference between the two electrodes, wherein the potential difference causes the bichromal balls to rotate toward one of the electrodes (col. 2, lines 18-25, col. 3, lines 40-43, Fig. 1); wherein the organic group comprising at least one mixtures.

9. With respect to claim 10, Jacobson et al. discloses a twisting-cylinder display comprising of:

a) an arrangement of capsules, wherein an optical response results from the rotation of elements in a fluid within the capsule, wherein a portion of the elements comprises a modified colored pigment having attached at least one organic group having an ionic group, ionizable group, or both; and
b) means to cause the controlled rotation of the elements to achieve the optical response (col. 2, lines 18-25, col. 3, lines 40-43, Fig. 1).

10. With respect to claim 6, Jacobson et al. discloses a twisting-ball display in Fig. 1 comprising of a bichromal ball having two or more segments wherein one of the segments comprises a modified colored pigment having attached at least one organic group and the other segment has a different color and different electrical properties, wherein the ball is enclosed

within a shell wherein a liquid is present between the shell and ball so that the ball is free to rotate (col. 2, lines 18-25, col. 3, lines 40-43, Fig.1).

11. With respect to claim 11, Jacobson et al. discloses a twisting-cylinder display comprising of: a bichromal element having two segments, wherein one of the segments comprises a modified colored pigment having attached at least one organic group and the other segment has at least a surface with a different color and different electrical properties, wherein each element is enclosed within a shell wherein a liquid is present between the shell and the element so that the element is free to rotate (col. 2, lines 18-25, col. 3, lines 40-43, Fig.1).

12. With respect to claims 12, 26 and 27, Jacobson et al. discloses a twisting-ball display in Fig.1 comprising of a bichromal ball having two or more segments wherein one of the segments comprises a modified colored pigment having attached at least one organic group and the other segment has a different color and different electrical properties, wherein each element is enclosed within a shell wherein a liquid is present between the shell and element so that the element is free to rotate (col. 2, lines 18-25, col. 3, lines 40-43, Fig.1); wherein the organic group comprising at least one mixtures.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made

to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobson et al.(U.S. Pat. 6,241,921 B1) in view of Sheridan (U.S. Pat. 5,919,409).

Jacobson et al. discloses a twisting-cylinder display comprising of:

(a) an arrangement of capsules, wherein each capsule comprises a bichromal element having at least two segments, wherein one of the segments comprises a modified colored pigment having attached at least one organic group and the other segment has a different color and different electrical properties, wherein each element is enclosed within a shell wherein a liquid is present between the shell and element so that the element is free to rotate in response to an electrical field;

(b) first and second electrodes wherein the arrangement is located between the electrodes and wherein at least one of the electrodes is substantially visually transparent; and

(c) means for creating a potential difference between the two electrodes, wherein the potential difference causes the bichromal elements to rotate toward one of the electrodes.

However, Jacobson et al. fails to disclose that each capsule comprises of polychromal elements. Within the same field of endeavor, Sheridan (U.S. 5,919,409) discloses a twisting ball display with each capsule comprises polychromal elements.

It would have been obvious, therefore, at the time the invention was made to a person having skill in the art to construct the twisting-cylinder display with each capsule comprises a bichromal element such as disclosed by Jacobson et al., with each capsule comprises a

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polychromal elements such as discloses by Sheridan (U.S. 5,919,409), for purpose of making cost-effective in manufacturing.

Allowable Subject Matter

15. Claims 16, 17, 20, 21, 24, 25, 28 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The reason for the indication of allowable subject matter is that (claim 16, 20, 24, 28) the at least one group comprises $-X-Sp-[Nion]pR$, $-X-Sp-[(-CH_2)_m-O-]p-R$, or $-X-Sp-[polymer]R$, wherein X represents an aromatic group or an alkyl group, Nion represent at least one non-ionic group, Sp represents a spacer group, R represents hydrogen, an aromatic group, or an alkyl group, p is an integer of from 1 to 500, m is an integer of from 1 to 12, and “polymer” comprises repeating monomer groups or multiple monomer groups; (claim 17, 21, 25, 29) the particle having attached at least one group comprises $-X-Sp-[A]pR$, wherein X represents an aromatic group or an alkyl group, Sp represents a spacer group, A represents an alkylene oxide group of from about 1 to 12 carbons, p represents an integer of from 1 to 500, and R represents hydrogen, a substituted or unsubstituted alkyl group, or a substituted or unsubstituted aromatic group disclosed in the claims is not found in the prior art.

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuyen Tra whose telephone number is (703) 306-5712. The examiner can normally be reached on Monday to Friday from 8:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps, can be reached on (703) 308-4883. The fax number for this Group is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Examiner: Tuyen Tra

Date: July 2, 2002



Hung Xuan Dang
Primary Examiner